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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,530	04/11/2001	Alain Dunand	33441	1249

7590 10/08/2003

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EXAMINER

TRAN, LY T

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/832,530

Applicant(s)

DUNAND, ALAIN

Examiner

Ly T TRAN

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 11 is/are rejected.
- 7) ☒ Claim(s) 4-10, 12-21 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

1. Claims 1-3 and 11 are withdrawn from allowable subject matter.
2. The substitute Specification is accepted by Examiner.

Claim Objections

3. Claims 1-21 are objected to because of the following informalities: the term "possibly" in claim 1, line 9 must be removed because it makes the claim unclear. Appropriate correction is required.

Claims 2-21 are objected due to their dependency.

Specification

4. The abstract of the disclosure is objected to because the abstract must be only one single paragraph. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Cha et al (USPN 4,138,687).

Cha et al. discloses an ink drop generator for an ink jet printer comprising :

- A generator body (Fig.1)
- At least one acoustic wave generator (ig.1: element 12) with a body elongated in an axial direction to the ink jet (Fig.1), each generator having a vibrating surface (The surface of the element 12) perpendicular the axial direction of the jets, at least one section comprising the vibrating surface of each acoustic generator being housed in a housing of the drop generator body (Fig1)
- One resonance cavity (Fig.2) intended to contain ink, a first section only of each cavity being constituted in a main section of the generator body and in this configuration, a second section in a continuation of the generator body connected to be leaktight to the generator body, each cavity hahing an ink feed, each cavity being defined particularly by a nozzle plate (element 22) and a wall, the intersection of the wall and the nozzle plate defining a first plane contour line of the wall, the nozzle plate comprising a plurality of nozzles aligned along an axial direction of the nozzles perpendicular to the axial direction of the jets (Fig.1; element 36)
- A generator characterized in that the wall of each cavity is perpendicular to the nozzle plate (element 22), the first contour line being formed by two equal segments that parallel to one another and the axial direction of the nozzles, each segment having two ends: a first and a second end, the two first ends of each segment being connected by a first curved line and the two second ends of each segments being connected by a second curved

line (when the nozzle plate, the manifolds 18 and the transducer holder are stack on each other, the contour is obtained).

- The curved line is concave toward the inside of the cavity (Fig.1)
- The first and second curved lines are constituted by semicircles the diameter of which is the space between the two equal segments (Fig.1).

FIG-1

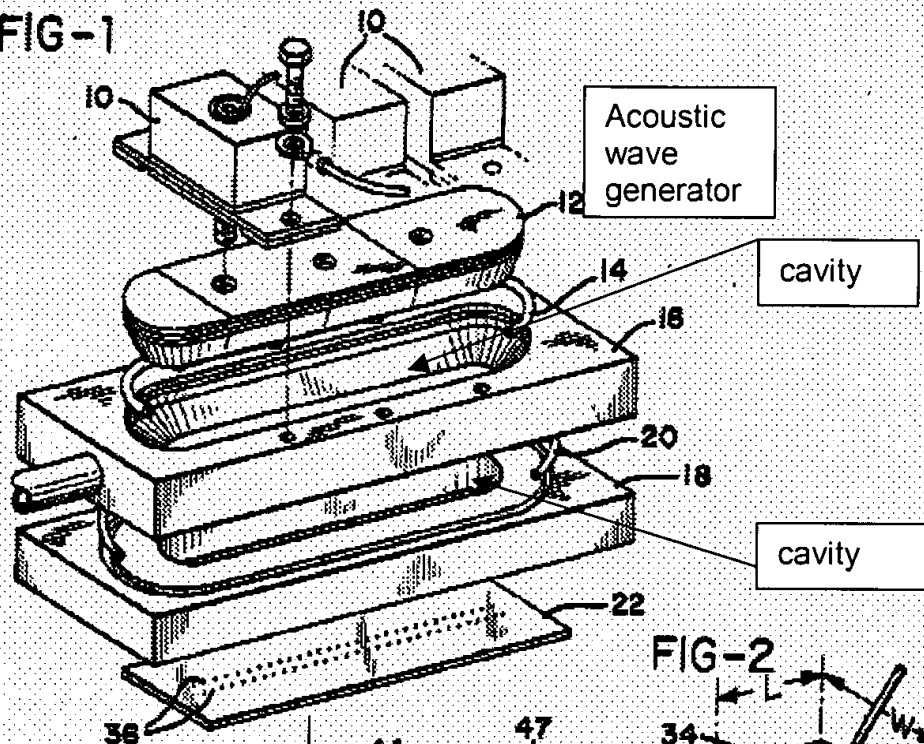


FIG-3

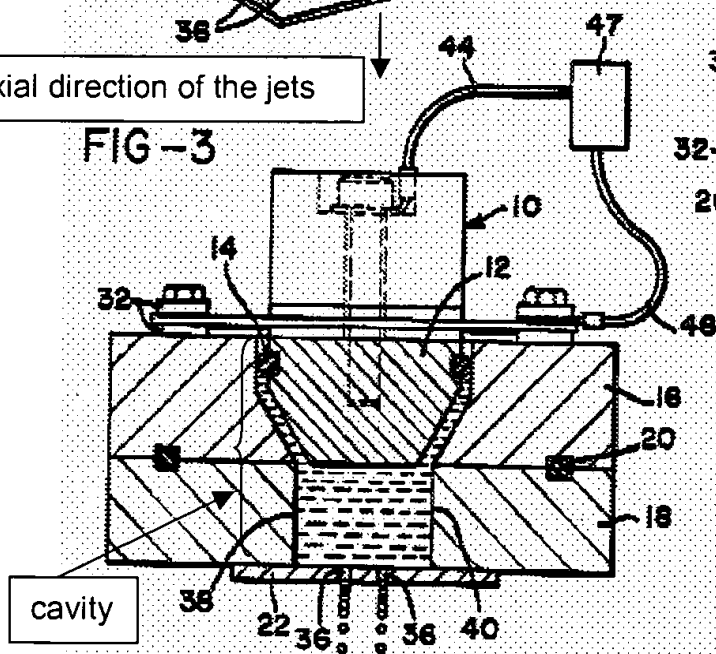


FIG-2

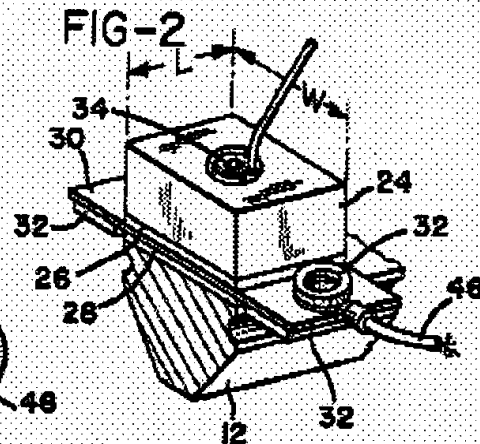
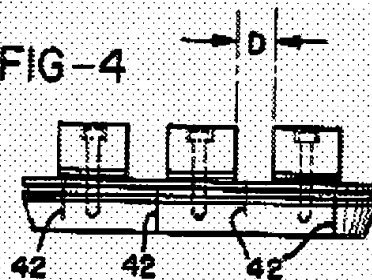


FIG-4



Allowable Subject Matter

6. Claims 4-10 and 12-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 4-6 are allowable over prior art of record because at least prior art does not disclose or teach that the largest measurement of the first contour of the cavity lies along the axial direction of the nozzles, the distance between two segments being approximately $1/4$ and the height of the wall being between $1/2$ and $3/4$.

Claims 7-10 are allowable over prior art of record because at least prior art does not disclose or teach that the acoustic wave generator housing and the cavity are connected by a hollow connector section defined by a lateral connector surface, the lateral surface having along the axial line of the jets, a lower limit in the cavity and an upper limit close to an acoustic generator housing, the upper limit of the transverse cross section of the surface being circular with a diameter equal to that of the acoustic wave generator housing, the intersections of these surface with the planes parallel to the nozzle plate, these planes being under the upper limit and above the lower limit, being closed curves the perimeter of which diminished when the intersection plane moves away from the upper limit.

Claims 12 and 15-21 are allowable over prior art of record because at least prior art does not disclose or teach that the nozzles of the cavity are equidistant and that the distance between an end nozzle of an end cavity of the body and a section of the

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external wall of the body located at the intersection of the wall with the jet place is shorter than half the distance between two consecutive nozzles of the nozzle plate.

Claims 13 and 14 are allowable over prior art of record because at least prior art does not disclose or teach that the distance between two end nozzles and two consecutive cavities of the same body is equal to the distance between two consecutive nozzles of the same cavity.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ly T TRAN whose telephone number is 703-308-0752. The examiner can normally be reached on M-F (7:30am-5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 703-308-4896. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0967.



September 2, 2003



Stephen D. Meier
Primary Examiner